REMARKS

Please reconsider the application in view of the above amendments and the following remarks. Applicant thanks the Examiner for carefully considering this application.

1. Disposition of Claims

Claims 1 and 3-15 are pending in the present application. Claims 1, 12, and 13 are independent. The remaining claims depend, directly or indirectly, from claims 1, 12, and 13.

2. Claim Amendments

Independent claim 1 was amended to clarify that the shield control circuitry, after a transition on the signal path, causes the first wire to transition to a value that causes a charge up of capacitance between the signal path and the first wire. Independent claim 13 was amended to clarify that after the signal on the signal path has transitioned to a first voltage potential, a capacitor is charged by causing a wire to transition to a second voltage potential. No new matter has been added by way of these amendments as support for these amendments may be found, for example, in Figure 3b and in paragraph [0022] of the present application.

3. Rejection(s) under 35 U.S.C § 103

Claims 1 and 3-15 were rejected under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 5,596,506 issued to Petschauer et al. (hereinafter "Petschauer") in view of U.S. Patent No. 6,285,208 issued to Ohkubo (hereinafter "Ohkubo"). Claims 1 and 13 have been amended in this reply to clarify the present invention recited. To the extent that this rejection may still apply to the amended claims, the rejection is respectfully traversed.

The present invention is directed to an improved technique for shielding wires. The present invention uses circuitry that dynamically controls the values on wires that shield the signal such that the shield wires are always at a voltage potential of a final value of an active transmission on the signal.

As seen with reference to Figure 3b of the present invention and discussed with reference to paragraphs [0026] - [0028] of the present invention, the signal **42** may be low initially and the shield wire **44** may be high initially. When the signal **42** transitions high **60**, a discharge of capacitor **46** is initiated as the signal **42** and the shield wire **44** are at the same potential. As discussed, for example, with reference to paragraphs [0022] - [0023] of the present application, delay element **50** generates a delay that compensates for signal propagation time on the signal **42** and generates a charging event on the capacitor **46** between the signal **42** and shield wire **44**. The delay element **50** causes the shield wire **44** to transition to low in response to the signal **42** transitioning high **60**.

As seen with further reference to Figure 3b, when the signal **42** transitions low **64**, a discharge is again initiated on capacitor **46**. After a subsequent delay from delay element **50**, the shield wire **44** transitions high **66**, causing a charging of capacitor **46**. In this manner, the signal driver **40** only participates in discharge events. Thus, a transition of the signal **42** does not cause a build up of capacitance between the signal path **42** and shield wire **44**. Because discharge events require the flow of current through local loops, other signal drivers are not adversely affected by the signal driver **40** (see, *e.g.*, paragraph [0019] of the Specification).

Amended independent claim 1 of the present application requires, in part, that **after** a transition on the signal path, shield control circuitry causes a value on the first wire to transition to a value that causes a charge up of capacitance between a signal path and the first wire. Therefore, a subsequent transition on the signal path causes a discharge of capacitance between the signal path and the first wire.

Independent claim 12 of the present application requires, in part, that shielding control means actively control a value on wires shielding that signal path such that the driving means **only participates in discharge events**.

Amended independent claim 13 of the present application requires, in part, that **after** the signal on the signal path has transitioned to a first voltage potential, a capacitor is charged by causing a wire to transition to a second voltage potential, wherein the wire shields the signal path.

The Office Action dated September 7, 2004 specifically states that Petschauer fails to disclose the use of shield control circuitry. Instead, relying on Figures 5, 10, and 11 of Ohkubo, the Examiner asserts that Ohkubo teaches a semiconductor IC that includes signal lines, a plurality of shield wiring lines, as well as shield control circuitry. Ohkubo is directed to a technique for parasitically accompanying an interline capacitance with signal wiring lines for connecting circuit blocks in an integrated circuit, as well as increasing an activation speed of a signal wiring line (see column 4, lines 20-29). Ohkubo fails to disclose, or otherwise teach, the limitations of the claimed invention not disclosed in Petschauer.

Neither Figures 5, 10, or 11 of Ohkubo as referenced by the Examiner nor the remaining portions of Ohkubo show, as required by claim 1 of the present invention, shield control circuitry that causes a value on the first wire to transition to a value that causes a charge up of capacitance between a signal path and the first wire after a transition on the signal path, such that a subsequent transition on the signal path will cause a discharge of capacitance between the signal path and the first wire. As seen with reference to Figures 6F – 6H Ohkuba, a transition on a signal line (for example, **F4**) causes a corresponding transition on the surrounding shield lines (for example, **S3** and **S4**). Therefore, no charging of capacitance takes place.

Further, it is clear that Ohkubo does not teach that the driving means (*e.g.*, **B41** as shown in Figure 5) **only participates in discharge events** as required by independent claim 12 of the

present application. For example, as seen with reference to Figures 6F-6H of Ohkubo, it is clear that the signal line **F4**, which transitions from a "low" potential to a "high" potential, does not participate in a discharge event. Further, no charge of capacitance is built up for discharge when shield lines **S3** and **S4** also transition from low to high. Therefore, when signal **F4** subsequently transitions low, the transitioning of signal **F4** does not result in a discharge event.

The Examiner asserts that Figures 5, 6F, 6G, and 6H of Ohkubo show how the wires shielding the signal path are controlled to participate only in discharge events, or "0" to "1" transitions. However, as seen with reference to these figures, the shield lines **S3** and **S4** transition from low to high ***at the same time*** as the signal line **F4**. When **F4** transitions from low to high, the shield lines **S3** and **S4** also transition from low to high. Thus, the transition of signal line **F4** does not cause a subsequent transition of a shield line after a transition on the signal line **F4**. Consequently, no charging of capacitance occurs between the signal wire and a shield wire after there is a transition on the shield wire.

Additionally, when considering other transition instances such as shown in Figures 6H and 6I of Ohkubo, it is clear that a transition on a shield line (*e.g.*, **S4**) may occur when there is no transition on a signal line (*e.g.*, **F5**). Thus, a shield wire may transition to a value that causes a charge up of capacitance even when there is no corresponding prior transition on a signal line. With reference to Figures 7A and 7B of Ohkubo, it is also clear that a transition on a signal line (e.g., **F4**) may not cause a transition on a corresponding shield line (e.g., **S3**).

The Examiner further asserts that Petschauer teaches in colum 11, lines 3-36 "how the charging and discharging of the capacitor takes place when the signal transitions from '0' to '1,' and '1' to '0' as claimed." However, Petschauer discusses (i) how the amount of crosstalk voltage that can be tolerated on the high and low voltage levels of a victim net is reduced and (ii) how to determine if these available noise margins are exceeded (see, for example, column 11, lines 16-23). It is clear that there is no discussion of, for example, charging a capacitor by

causing a wire to transition to a second voltage potential **after** the signal path has transitioned to a first voltage potential, as required, in part, by amended independent claim 13 of the present application.

In view of the above, Petschauer and Ohkuba, whether considered separately or in combination, fail to show or suggest the present invention as recited in independent claims 1, 12, and 13 of the present application. Thus, these claims are patentable over Petschauer and Ohkuba. Dependent claims are allowable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

Applicant believes this reply is fully responsive to all outstanding issues and places the present application in condition for allowance. If this belief is incorrect, or other issues arise, the Examiner is encouraged to contact the undersigned or his associates at the telephone number listed below. Please apply any charges not covered, or any credits, to Deposit Account 50-0591 (Reference Number 03226/158001; P6867).

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